TREATMENT OF XANTHELASMA WITH VITAMIN B_{12}*

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One of the more common clinical manifestations of disturbed lipid metabolism is the formation of yellowish, plaque-like tumors on the eyelids, known as xanthelasma palpebrarum. Despite the wealth of literature (1, 2, 3, 4) regarding the pathogenesis and nature of these tumors, treatment, which rests empirically on dietary measures or surgery, is unsatisfactory.

The discoveries of Ling and Chow (5, 6), who found a definite effect of vitamin B_{12} on carbohydrate and fat metabolism in laboratory animals and noted that its effect on weight gain was greater when the diet was high in carbohydrates than when it was high in fat or fat carbohydrate mixtures, indicated that the drug could be tried in patients with xanthelasma. While the treatment has not resulted in dramatic cures, there is sufficient relief of objective symptoms to justify presentation in preliminary form in the hope that further studies may lead to a satisfactory medical treatment of the disease.

The only criterion for inclusion in the group was the objective finding of one or more characteristic plaques. In a study of the incidence of xanthelasma (7), it was noted that the condition is more frequently seen in elderly Jews than in non-Jews of the same age group. In that study it was also found that the cholesterol level in xanthelasma patients was not consistently higher than in patients who were not affected. Furthermore, non-Jews with diabetes mellitus did not exhibit a tendency toward development of plaques while diabetic Jews did. The data presented here deal with the therapeutic effect of vitamin B_{12}.

Thirty-five patients have been treated with the drug administered in doses ranging from 30 micrograms to one milligram given subcutaneously once weekly for six to twenty weeks. The results in these patients are outlined in Table I.

Since in no instance was there complete involution of all lesions, critical evaluation of the therapeutic results by "degrees of improvement" was not practicable. Because objective improvement was observed in most patients, it was arbitrarily decided to call the result excellent if one or more smaller lesions underwent involution to the point where they were no longer clinically apparent, while a "good" result was obtained when all lesions diminished in size appreciably. Patients denoted "failures" showed no change.

Patients who received the smaller doses improved more slowly, treatment being extended over a two to four month period, after which chemical cautery with liquefied phenol was used to remove the remainder of the lesion.

There was no essential difference in results in those patients receiving 500 or 1000 microgram doses. Improvement was noted usually by the end of the third week and by the end of six weeks almost all lesions were flat, although the superficial changes were still present. Application of liquefied phenol to the

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TABLE I

Thirty-five patients with xanthelasma treated once weekly with parenteral vitamin B_{12}

No. of Patients	Dose, Micrograms	Results		
		Good*	Excellent†	Failure
10	30	8	0	2
10	500	7	2	1
15	1000	11	3	1

* Definite diminution in size of plaques.

† Marked diminution in size of all plaques with complete involution of one or more smaller lesions.

NOTE: Since most of the diminution in size was a flattening process rather than an actual reduction in linear dimensions, objective improvement is based on clinical impression rather than accurate measurement.

TABLE II

Thirty patients with xanthelasma treated with 1.0 mg. vitamin B_{12} given orally, daily for 30 days

No. of Patients	Results	
	Improved	No change
30	5	25

TABLE III

Vitamin B_{12} blood levels in 13 elderly patients with xanthelasma after oral administration of a single dose of drug

	Total Patients	Patients With Rise in Blood Level
Control	2	0
1 milligram	8	5
3 milligrams	3	3

TABLE IV

Effect of vitamin B_{12} on cholesterol level

Method of Administration	Number of Patients	Average Control Cholesterol (mg. %)	Weeks After B_{12}			
			One	Two	Three	Four
Oral*	30	350	320	345	360	340
Parenteral	35	165	185	140	170	180

* All elderly Jews.

lesions bi-weekly for six to ten treatments sufficed to clear them without obvious scarring.

No biopsies were done and insufficient time has elapsed to rule out the possibility of recurrence. Further observations are therefore indicated.

Thirty patients were treated with oral vitamin B_{12}, one milligram being given daily for thirty days. The results are shown in Table II.

The results in this group of patients were disappointing, since it was hoped that large doses administered orally would give results comparable to those obtained with 30 micrograms parenterally.

In an effort to determine a reason for the failure of oral drug, absorption studies were done on 13 patients. Table III outlines the results.

As was expected, patients given placebo showed no rise in B_{12} levels. Eight patients were given a single one milligram dose and blood samples were drawn at the end of one and a half and three hours. Five showed an increase of 150 micro-micrograms or more. All three of the patients given three milligram doses had a significant increase in blood level.

The above data leave little doubt that B_{12} is absorbed from the gastrointestinal tract of elderly people but give no lead as to the reason for failure of oral medication to give good results in xanthelasma.

Since cholesterol metabolism has been associated with xanthelasma, a study was done with both oral and parenteral drug to determine possible effect of B_{12} on cholesterol levels. These results are outlined in Table IV. There is no real change in cholesterol levels after administration of B_{12} orally or parenterally.

SUMMARY AND CONCLUSIONS

Sixty-five patients with xanthelasma have been treated with vitamin B_{12}.

Thirty patients were treated with oral drug with poor results.

Thirty-five patients were treated by parenteral administration of vitamin B_{12} with beneficial results in thirty-one.

The reason for the improvement is obscure but is apparently not related to any effect on cholesterol metabolism. Further investigations are indicated.

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